

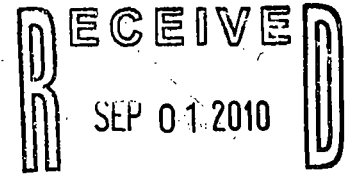


Minnesota Pollution Control Agency

520 Lafayette Road North | St. Paul, MN 55155-4194 | 651-296-6300 | 800-657-3864 | 651-282-5332 TTY | www.pca.state.mn.us



August 30, 2010



Superfund Division Remedial
Response Branch #2

Mr. Paul Zattoni
Divisional Environmental Manager
General Mills, Inc.
One General Mills Boulevard
Golden Valley, MN 55426

RE: Proposed Groundwater Pump Out System Shut Down and Monitoring Plan
General Mills East Hennepin Avenue Site, Minneapolis, MN

Dear Mr. Zattoni:

The Minnesota Pollution Control Agency (MPCA) staff has reviewed General Mills' August 2, 2010 proposal referenced above, which was submitted by Barr Engineering on behalf of General Mills. This proposal is for the planned shut-down of the groundwater control and pump-out system. The pump-out system was implemented under requirements specified in the October 23, 1984 Response Order by Consent between the MPCA and General Mills.

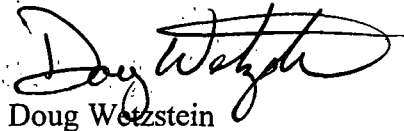
The MPCA hereby approves General Mills' August 2, 2010 proposed shut-down of the ground water control and pump-out system and monitoring plan with the following modifications:
(see enclosed)

- General Mills shall notify the MPCA of the date of system shut-down. Approval for this proposal shall be for up to one year from the date of shut-down.
- Groundwater monitoring information collected during this timeframe shall be submitted to Gary Krueger, the MPCA Project Manager.
- MPCA staff and Barr Engineering staff shall meet after six months of monitoring to evaluate ground water conditions and monitoring results, and to make any necessary changes to the monitoring plan.

Mr. Paul Zattoni
Page 2
August 30, 2010

If you have questions, please contact Gary Krueger of my staff at 651/757-2509.

Sincerely,



Doug Wetzstein
Supervisor
Superfund Unit 1
Closed Landfill and Superfund Section
Remediation Division

DW:csa

Enclosure

cc: Sara Ramsden, Barr Engineering
Tom Short, U.S. Environmental Protection Agency, Region V (w/enclosure)

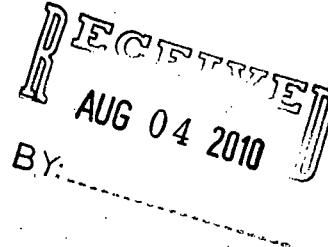


Barr Engineering Company
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August 2, 2010

Mr. Gary Krueger and Mr. Fred Campbell
Superfund Program
Remediation Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155-4194



**Re: Proposed Groundwater Pump Out System Shut Down and Monitoring Plan
General Mills East Hennepin Avenue Site, Minneapolis, MN**

Gentlemen:

As discussed in the June 23, 2010 meeting at the Minnesota Pollution Control Agency (MPCA) regarding the East Hennepin Avenue Site (the Site), General Mills desires to seek the delisting of the Site from the Minnesota Permanent List of Priorities and achieve closure. The remediation pump out system has been operating since 1985. Monitoring has shown significant improvement in water quality and water quality trends have been generally static for several years. The affected aquifers are not used as a drinking water supply. The groundwater discharges to the Mississippi River southwest of the Site, and an assessment completed by the MPCA several years ago (which we understand will be updated) indicated that the plume would not pose a risk to the river.

As the first step in evaluating the appropriateness of delisting and closure, MPCA staff suggested shutting down the groundwater pump out system for a period of approximately one year and evaluating groundwater conditions. In this letter, we recommend a scope for shutting down the groundwater pump out system for a period of one year and conducting groundwater monitoring during the shut down.

Pump Out System Shut Down

The groundwater pump out system has been operating at the Site for over 25 years to address volatile organic compound (VOC) contamination (trichloroethylene [TCE] is the primary contaminant of concern) associated with historic solvent disposal from the 1940s to the 1960s. Five pump-out wells (109, 110, 111, 112, and 113) are in the glacial drift and two pump-out wells (MG-1 and MG-2) are in the Magnolia member of the Platteville bedrock formation. Water from wells 109 and 110 is routed to the onsite air stripper for treatment prior to discharge to the storm sewer. All other wells discharge directly to the storm sewer. Samples are collected quarterly from the pump out wells and treatment system discharge in accordance with the NPDES permit.

Once approval of this shut down plan is obtained from the MPCA, the pump out system will be shut down for a period of one year. System components (i.e., well pumps, air stripper, etc.) will be left in

place and appropriate post-shut down maintenance of components will be conducted as necessary in the event that the system will need to be turned back on at the end of the one-year period or if groundwater monitoring indicates the need to turn the system back on before the one-year period is over as described below.

Groundwater Monitoring

Current Monitoring

Currently, water levels and samples are collected annually from the groundwater monitoring well network associated with the Site. Monitoring well locations and TCE concentrations from the 2009 annual monitoring event are shown in the figures in Attachment A to this letter. Samples are analyzed for TCE during even years and for a longer list of VOCs in odd years. Due to decreasing concentrations, the number of wells monitored has been reduced over the years. Water levels and samples are currently collected as follows:

Glacial Drift

- Water levels and samples: wells Q, T, V, W, and X

Carimona Member of the Platteville Formation

- Water levels and samples: wells 9, 10, 11, 12, SS, and UU
- Water levels only: wells 8, RR, and WW

Magnolia Member of the Platteville Formation

- Water levels and samples: wells 14, QQ, and TT
- Water levels only: wells OO and VV

St. Peter Sandstone

- Water levels and samples: wells 200 and 203
- Water levels only: wells 201 and 202

Prairie du Chien/Jordan

- Sample only: Henkel (onsite well)

Proposed Monitoring

To evaluate the effect of shutting down the pump out system, we propose increasing the frequency of sampling to quarterly in selected "sentinel" monitoring wells in the glacial drift and Magnolia Member of the Platteville to monitor any plume migration. Sentinel monitoring wells were selected based on observed flow directions prior to initiation of pump out system activities in the 1980s which are summarized in Barr's report entitled *Site Characterization Study and Remedial Action Plan, General Mills Solvent Disposal Site, 2010 East Hennepin Avenue, Minneapolis, Minnesota*, dated June 1983. Groundwater flow in the glacial drift was to the southwest and flow in the Magnolia Member was to the northwest. Pump out wells will also be sampled quarterly. Samples will be analyzed for TCE only or the longer list VOCs in alternating quarters (i.e., TCE only in first and third quarters; longer list VOCs in second and fourth quarters). Monitoring wells in the Carimona Member of the Platteville, the St. Peter Sandstone, and the Prairie du Chien will continue to be analyzed annually according to the current monitoring plan and samples will be analyzed for the longer list VOCs.

We propose collecting two additional comprehensive rounds of water levels from the glacial drift and Platteville wells – one round within a few days of system shut down, and the second round within a few weeks of system shut down.

The proposed monitoring plan is as follows:

Glacial Drift

- Quarterly water levels and samples: wells 109, 110, 111, 112, 113, V, W, and X
- Quarterly water levels only: wells Q, T
- Annual samples: wells Q, T
- Two comprehensive water level rounds within a few weeks of system shutdown: all glacial drift wells listed above

Carimona Member of the Platteville Formation

- Quarterly water levels: 8, 9, 10, 11, 12, RR, SS, UU, and WW
- Annual samples: 9, 10, 11, 12, SS, and UU (longer list VOCs)
- Two comprehensive water level rounds within a few weeks of system shutdown: all Carimona wells listed above

Magnolia Member of the Platteville Formation

- Quarterly water levels and samples: wells MG-1, MG-2, 14, and TT
- Quarterly water levels only: wells OO, QQ, and VV
- Annual samples: well QQ
- Two comprehensive water level rounds within a few weeks of system shutdown: all Magnolia wells listed above

St. Peter Sandstone

- Annual water levels and samples: wells 200 and 203 (longer list VOCs)
- Annual water levels only: wells 201 and 202

Prairie du Chien/Jordan

- Annual sample only: Henkel well (longer list VOCs)

Any changes to the proposed monitoring plan (e.g., any changes to the selection of sentinel wells based on observed groundwater flow direction once the system is shut down, etc.) will be discussed with the MPCA.

Contingency Levels

Groundwater TCE concentrations in sentinel groundwater monitoring wells will be compared to the following criteria to trigger an evaluation of restarting the pump out system to contain the plume:

Glacial Drift

- TCE concentrations above 100 ug/L in wells V, W, or X

Magnolia Member of the Platteville Formation

- TCE concentrations above 10 ug/L in wells 14 or TT

The MPCA will be notified if any of the above criteria are exceeded. The monitoring data will be evaluated (quality assurance/quality control checks of the data, historical data review, re-sampling, and/or risk evaluation) and General Mills and Barr will work with the MPCA to determine a path forward (e.g., continue monitoring, modify monitoring plan, and/or restart the pump out system).

Reporting

Groundwater monitoring information (tables showing water levels and analytical data) will be shared with MPCA staff after the completion of each monitoring event. After the one-year of monitoring is completed, a monitoring report will be submitted to MPCA for review and next steps will be discussed (e.g., continued monitoring, modify monitoring plan, restart all or part of the system, etc.).

Additional Delisting and Closure Evaluation Tasks

The MPCA signed a Declaration of Restrictions and Covenants (Restrictive Covenant) with the property owner (BBD Holdings, Inc.) in 2004. We assume this document is appropriate and sufficient, but if necessary, MPCA will review and update this institutional control. In addition, we understand the MPCA will be reviewing and updating the surface water pathway evaluation prepared by the MPCA in 1997.

While the groundwater pump out system is shut down and monitoring is conducted, General Mills will also evaluate the following items in support of delisting and closure in coordination with the MPCA:

- Vapor intrusion pathway evaluation: We will review the existing 1997 vapor assessment, current MPCA guidance, and Site conditions and prepare a risk evaluation plan and/or summary with regards to vapor intrusion.
- Groundwater pathway evaluation: The existing receptor well survey will be updated as necessary. A new evaluation of groundwater flow and use of the principal aquifers will be completed, including documentation of appropriate features like the Twin Cities Army Ammunition Plant (TCAAP) special well construction area.
- Soil pathway evaluation: It is assumed that the combination of the 2001 soil investigation and the 2004 Restrictive Covenant (or its replacement) is sufficient to address the soil exposure pathway risk evaluation.

We sincerely appreciate the willingness of the MPCA to work with General Mills and Barr to evaluate the appropriateness of delisting and closing this Site. Please contact me with comments or questions and to discuss the path forward.

Sincerely,



Sara Ramsden, P.E.
Project Manager

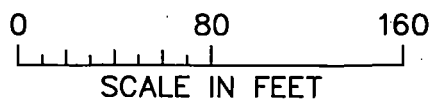
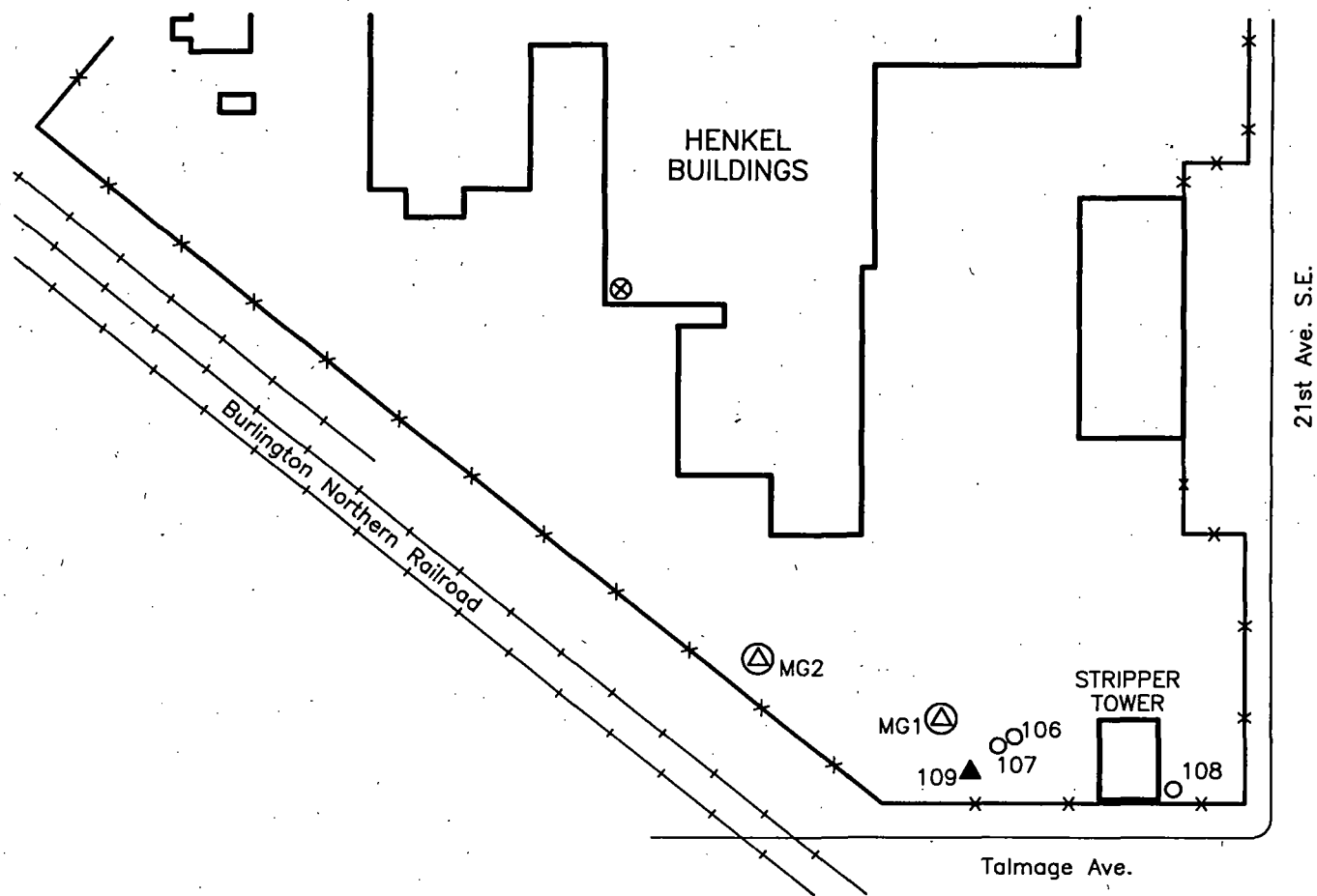
cc: Paul Zattoni, General Mills
Allan Gebhard, Barr Engineering Co.
Bill Bangsund, Barr Engineering Co.

Attachments:

Attachment A – Well Location and 2009 TCE Concentration Figures

Attachment A

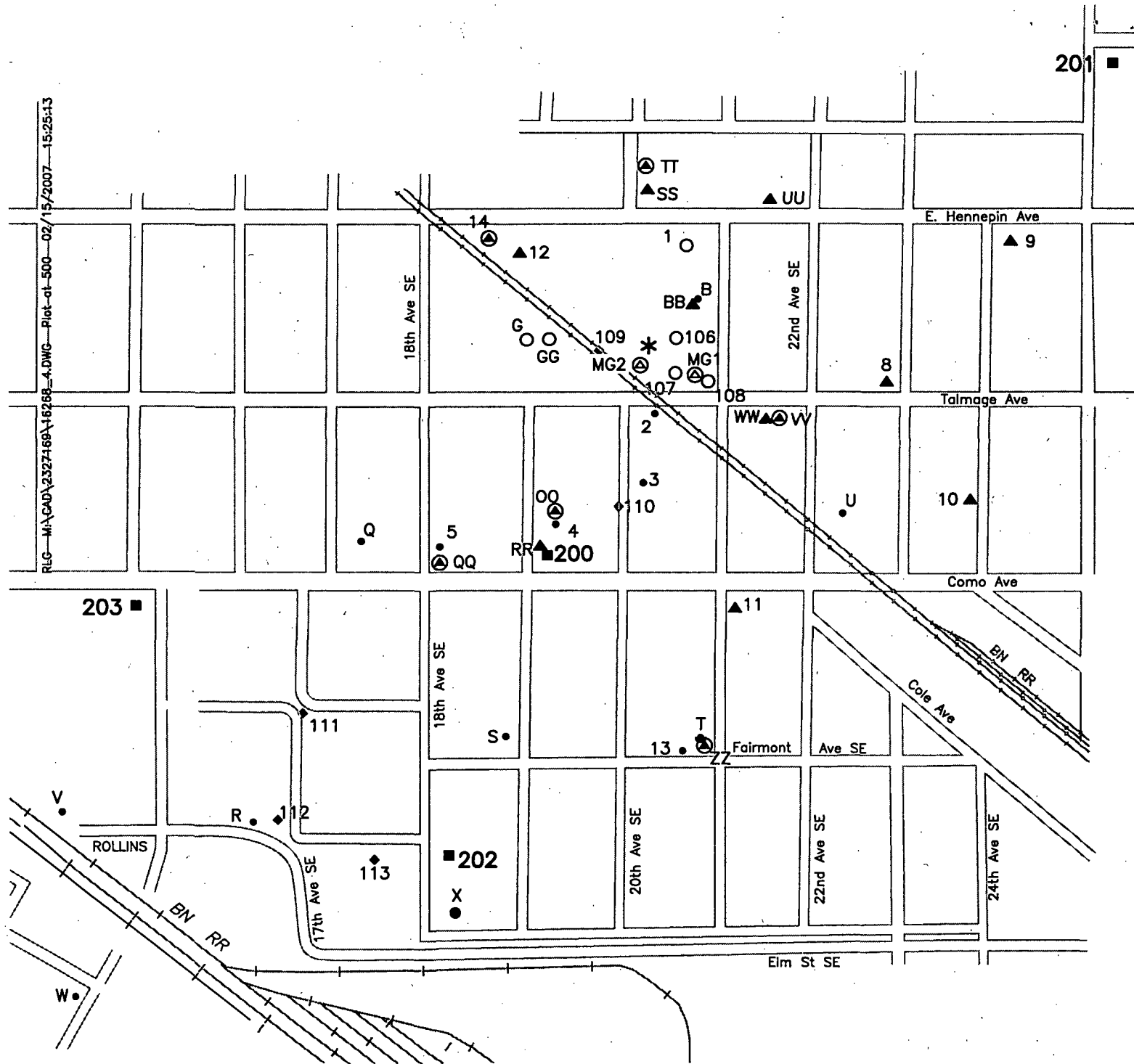
Well Location and 2009 TCE Concentration Figures



- ▲ Glacial Drift Pump-Out Well
- ⊠ Magnolia Member Pump-Out Well
- Monitoring Well
- Well Abandoned in 2003
- ⊗ Henkel (Opdc) Well

Figure 3

EAST HENNEPIN AVENUE
SITE MAP



- GLACIAL DRIFT MONITORING WELL
- ◆ SITE AND DOWNGRADIENT GLACIAL DRIFT PUMP-OUT WELL
- ST. PETER SANDSTONE MONITORING WELL
- * FORMER DISPOSAL SITE
- ▲ CARIMONA MEMBER MONITORING WELL
- ⊕ MAGNOLIA MEMBER MONITORING WELL
- ⊕ MAGNOLIA MEMBER PUMP-OUT WELL
- WELL ABANDONED 2003



0 500 1000
SCALE IN FEET

Figure 4
SITE MONITORING WELL LOCATIONS

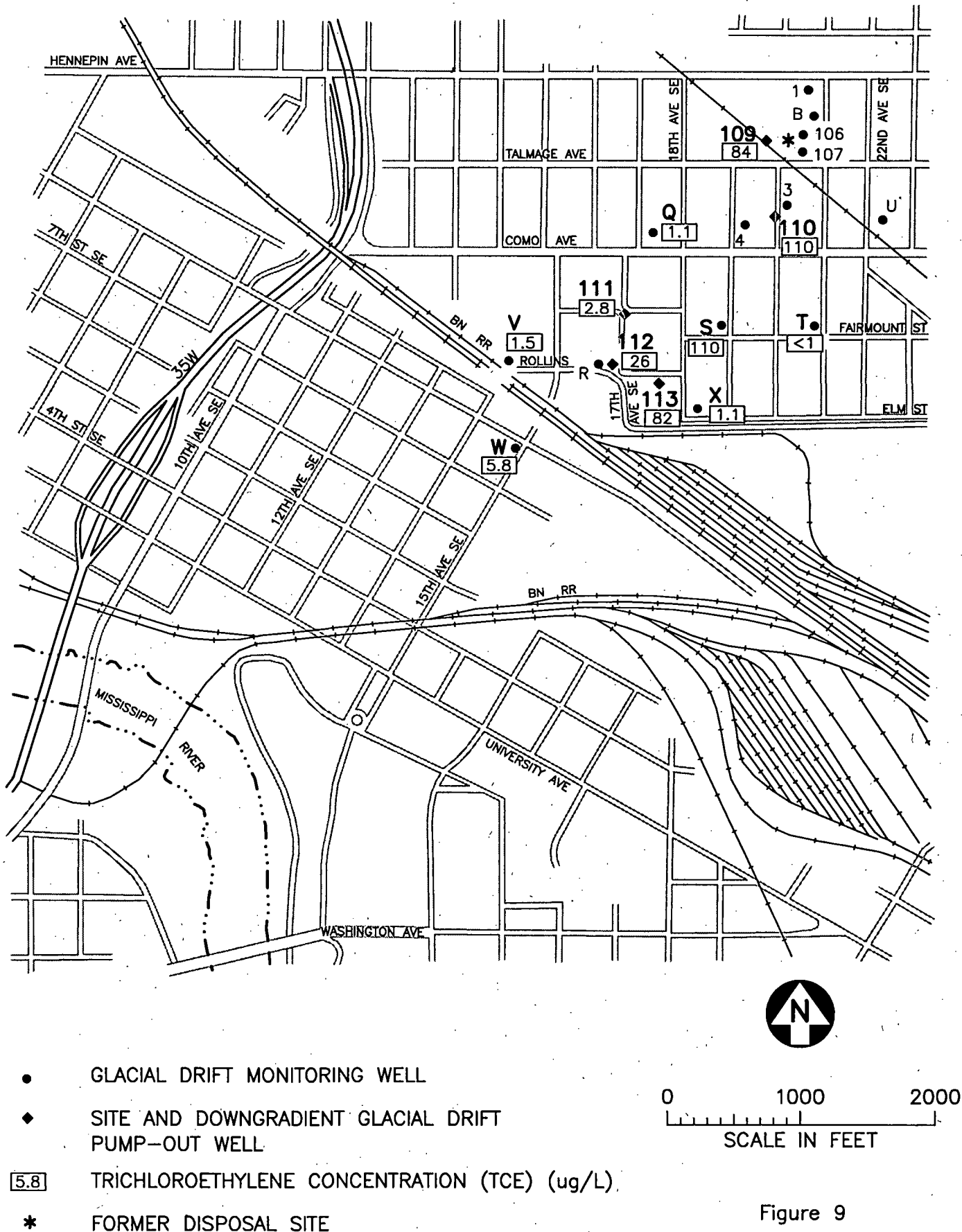
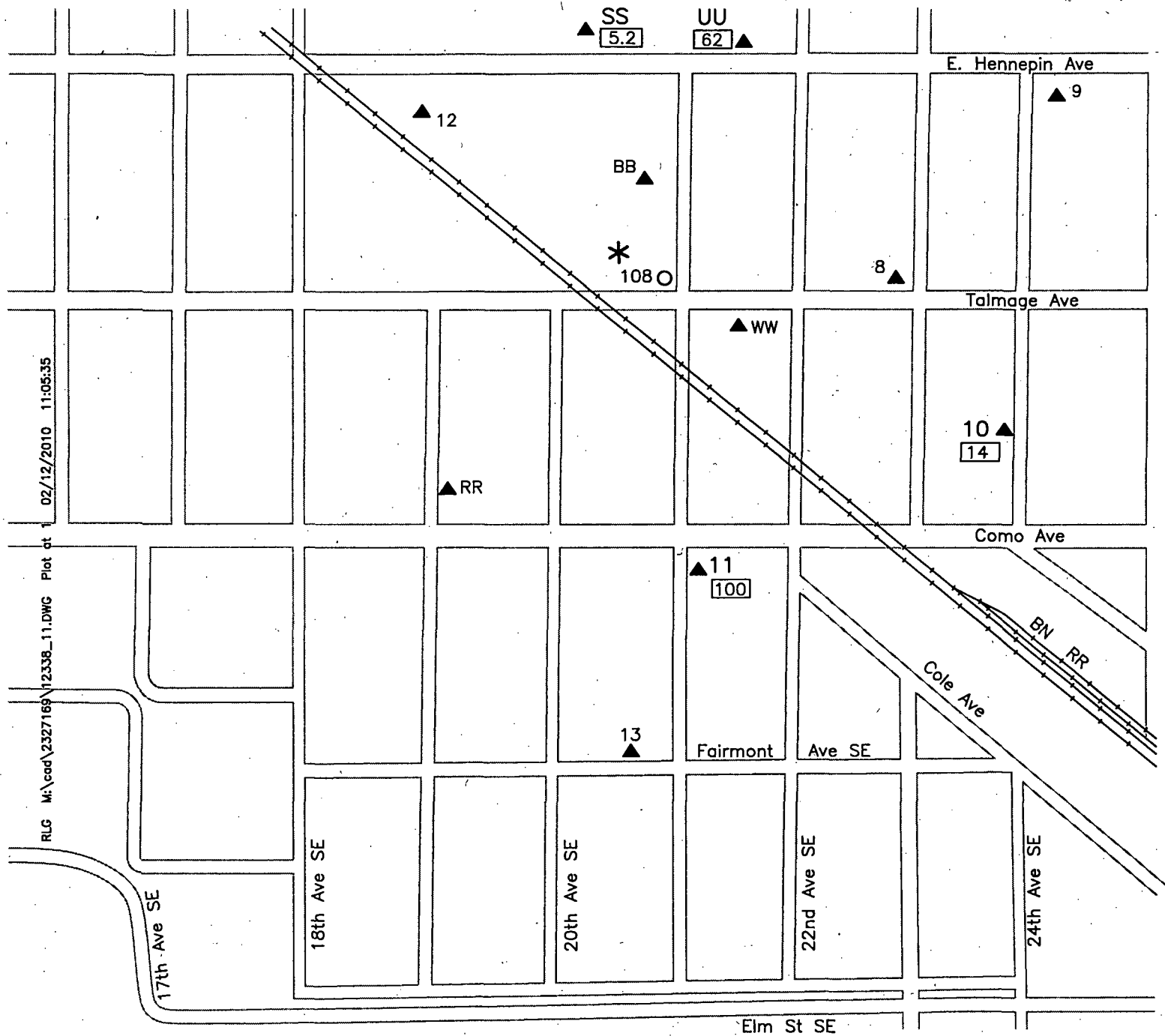


Figure 9

GLACIAL DRIFT
GROUNDWATER QUALITY (TCE)
August 28, and
November 24, 2009

NOTE: INDIVIDUAL ANALYTICAL RESULTS FOR
PUMP-OUT WELLS ARE TAKEN FROM
AUG 2006.



▲ CARIMONA MEMBER MONITORING WELL

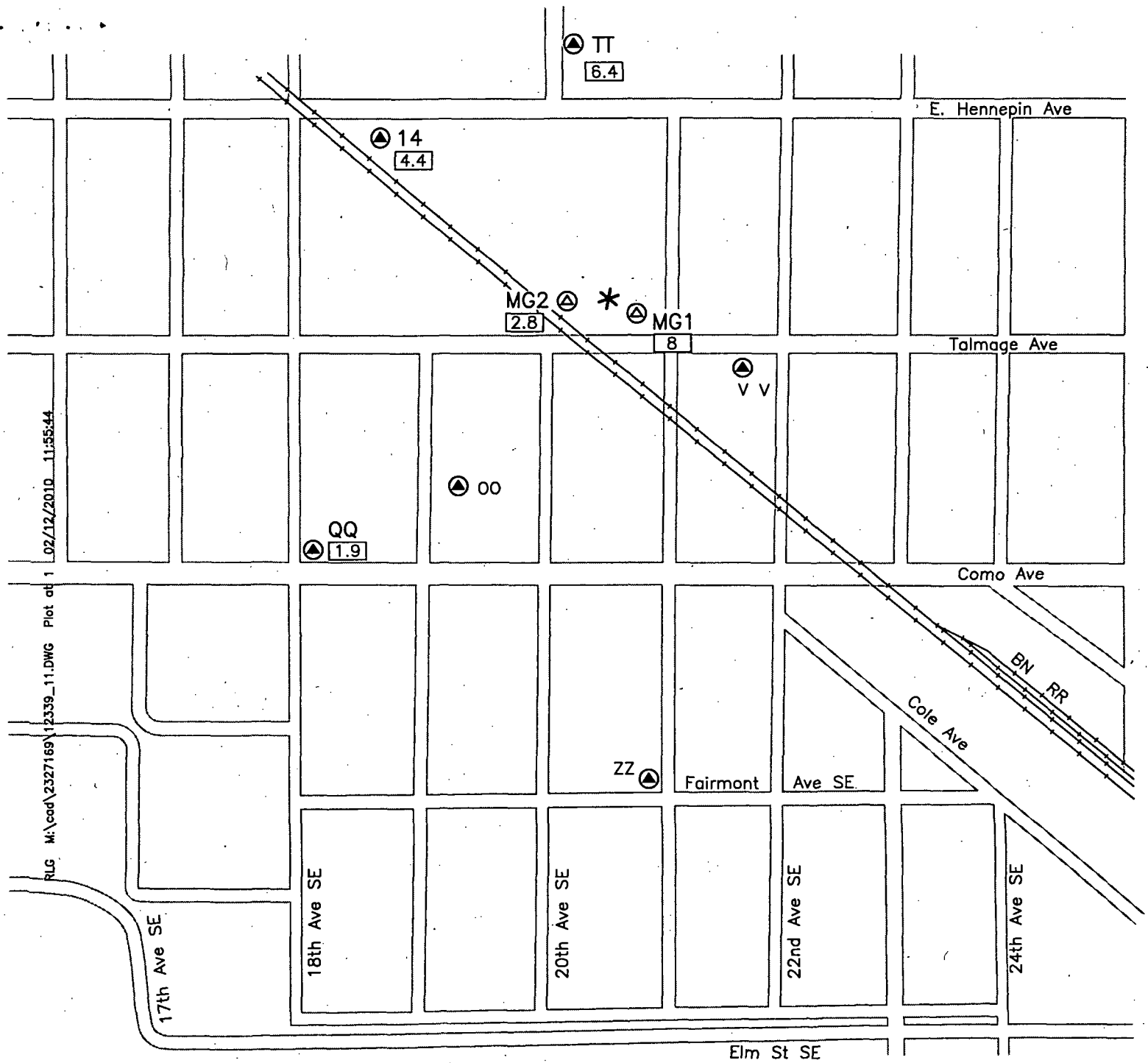
[14] TRICHLOROETHYLENE CONCENTRATION (TCE) (ug/L)

* FORMER DISPOSAL SITE

○ WELL ABANDONED IN 2003

Figure 11

CARIMONA MEMBER
GROUNDWATER QUALITY (TCE)
November 30 and December 1, 2009



- ▲ MAGNOLIA MEMBER MONITORING WELL
- ◻ MAGNOLIA MEMBER PUMP-OUT WELL
- 1.9 TRICHLOROETHYLENE CONCENTRATION (TCE) (ug/L)
- * FORMER DISPOSAL SITE

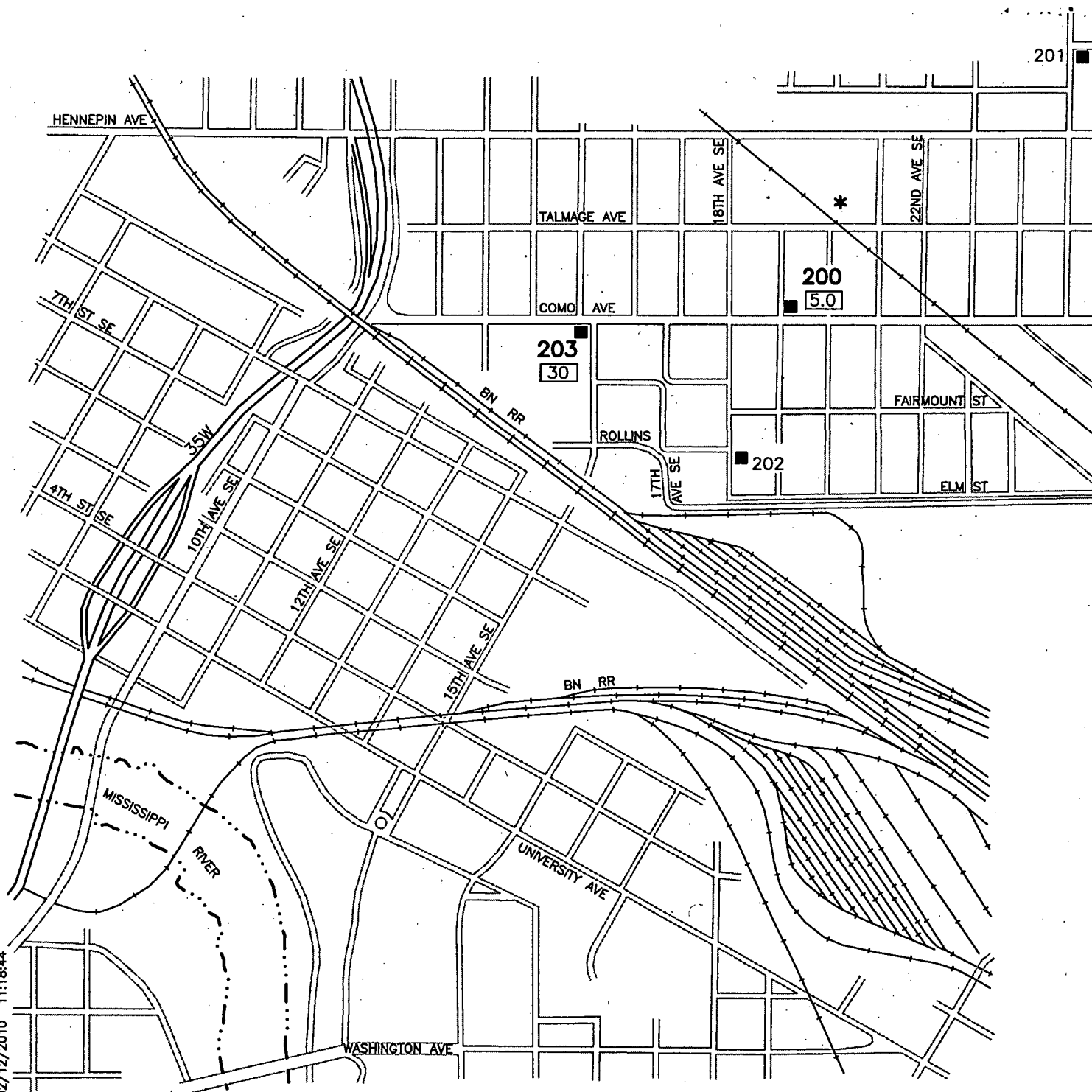
NOTE: INDIVIDUAL ANALYTICAL RESULTS FOR PUMP-OUT WELLS ARE TAKEN FROM AUG 2006.



0 400 800
 SCALE IN FEET

Figure 13

MAGNOLIA MEMBER
 GROUNDWATER QUALITY (TCE)
 August 28, November 30
 and December 1, 2009



- ST. PETER SANDSTONE MONITORING WELL
- [5.0] TRICHLOROETHYLENE CONCENTRATION (TCE) (ug/L)
- [ND] NOT DETECTED
- * FORMER DISPOSAL SITE



0 400 800
SCALE IN FEET

Figure 15

ST PETER SANDSTONE
GROUNDWATER QUALITY (TCE)
December 4, 2009